**WHAT IS CLAIMED IS:**

1. A method for preprocessing audio signal to be processed by a codec having a variable coding rate, comprising the step of:

performing a pitch harmonic enhancement ("PHE") preprocessing of the audio signal, to thereby enhance the pitch components of the audio signal.

2. A method as defiled in claim 1,wherein said step of performing PHE preprocessing is to modify the audio signal such that a long-term prediction gain of the audio signal is increased.

3. A method as defined in claim 1, wherein said step of performing PHE preprocessing comprises the step of:

applying a smoothing filter in a frequency domain.

4. A method as defined in claim 3, wherein said step of applying a smoothing filter comprises the step of:

applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

5. A method as defined in claim 1. wherein said step of performing PHE preprocessing comprises the step of

performing Residual Peak Enhancement ("RPE").

6. A method as defined in claim 1 wherein said step of performing PHE preprocessing comprises the step of:

applying a smoothing filter in a frequency domain; and

performing RPE,

wherein said step of applying a smoothing filter is selectively performed depending on the property of the audio signal.

7. A method as defined in claim 6, wherein said step of applying a smoothing filter comprises the step of:

applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

8. A method as defined in claim 7, wherein said step of applying MTNF comprises the steps of:

evaluating a Global Masking Threshold ("GMT") curve of the audio signal in accordance with a perceptual sound model; and

selectively suppressing frequency components under said GMT curve.

9. A method as defined in claim 8, wherein said step of evaluating a GMT curve comprises the steps of:

normalizing absolute Sound Pressure Level ("SPL") by analyzing frequency components of the audio signal;

determining tone maskers and noise maskers;

reconstructing maskers by selecting a set of maskers among said determined maskers;

calculating individual masking thresholds for the selected set of maskers; and

calculating GMT from the calculated individual maskers.

10. A method as defined in claim 8, wherein said frequency suppressing step comprises the steps of:

making the portion below the GMT curve 0.

11. A method as defined in claim 8, wherein said frequency suppressing step comprises the steps of:

multiplying by a cosine smoothing function to the portion below the GMT curve.

12. A method as defined in claim 5, wherein said step of performing RPE comprises the steps of:

multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby enhancing the components at the multiples of pitch frequency relative to other components.

13. A method as defined in claim 6, wherein said step of performing RPE comprises the steps of:

multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby enhancing the components at the multiples of pitch frequency relative to other components.

14. A method as defined in claim 5, wherein said step of performing RPE comprises the steps of:

increasing selected frequency components to corresponding GMT values, thereby enhancing the components at the multiples of pitch frequency relative to other components.

15. A method as defined in claim 6, wherein said step of performing RPE comprises the steps of:

increasing selected frequency components to corresponding GMT values, thereby enhancing the components at the multiples of pitch frequency relative to other components.

16. A method as defined in claim 1, further comprising the step of performing dynamic range compression ("DRC") preprocessing by an AGC (Automatic Gain Control) preprocessing.

17. A method as defined in claim 16, wherein said AGC preprocessing comprises the steps of:

calculating a forward-direction signal level;

calculating a backward-direction signal level; and

generating a processed signal by calculating a final signal level based on said calculated forward and backward signal levels.

18. A system for preprocessing audio signal to be processed by a codec having a variable coding rate, comprising:

means for performing a pitch harmonic enhancement ("PHE") preprocessing of the audio signal, to thereby enhance the pitch components of the audio signal, wherein said means for performing PHE preprocessing comprises;

means for applying a smoothing filter in a frequency domain selectively depending on the property of the audio signal; and

means for performing RPE.

19. A system as defined in claim 18, wherein said means for applying a smoothing filter comprises means for applying a Multi-Tone Notch Filter ("MTNF") for decreasing residual energy.

20. A system as defined in claim 19, wherein said means for applying MTNF comprises:

means for evaluating a Global Masking Threshold ("GMT") curve of the audio signal in accordance with a perceptual sound model; and

means for selectively suppressing frequency components under said GMT curve.

21. A system as defined in claim 20, wherein said means for evaluating a GMT curve comprises:

means for normalizing absolute Sound Pressure Level ("SPL") by analyzing frequency components of the audio signal;

means for determining tone maskers and noise maskers;

means for reconstructing maskers by selecting a set of maskers among said determined maskers;

means for calculating individual masking thresholds for the selected set of maskers; and

means for calculating GMT from the calculated individual maskers.

22. A system as defined in claim 18, wherein said means for performing RPE comprises:

means for multiplying selected frequency components by a Peak Harmonic Enhancement ("PHE") response that is a function of a pitch for each frame, thereby

enhancing the components at the multiples of pitch frequency relative to other components.

23. A system as defined in claim 18, wherein said means for performing RPE comprises:

means for increasing selected frequency components to corresponding GMT values, thereby enhancing the components at the multiples of pitch frequency relative to other components.